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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/994,257	11/26/2001	Martin Andrew Schlosser	35015/002	8623

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DUFT SETTER OLLILA & BORNSSEN LLC
2060 BROADWAY
SUITE 300
BOULDER, CO 80302

EXAMINER

KENNY, STEPHEN

ART UNIT	PAPER NUMBER
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3726

DATE MAILED: 09/04/2003

11

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/994,257

Applicant(s)

SCHLOSSER ET AL.

Examiner

Stephen J Kenny

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-49 is/are pending in the application.
- 4a) Of the above claim(s) 11, 20, 28, 29, 34-49 and 231 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 7, 8, 12-19, 23, 24, 26, 27 and 30-33 is/are rejected.
- 7) ☒ Claim(s) 3-6, 9, 10, 22, 25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 16-18, 23, & 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lanham in view of Applicant's Admitted Prior Art (AAPA).

Regarding claim 1, Lanham discloses method of manufacturing a Coriolis flowmeter comprising: coupling a flow tube (401) means to a base (407, 409); affixing a driver (D) to said flow tube; coupling a pick-off means (RPO, LPO) to said flow tube; and affixing inlet and outlet ends of the flow tube to a process connection (411) (see Figure 4 & page 19, lines 11-20).

Lanham discloses the instant invention except for stating that the flow tube is constructed of PFA material.

AAPA discloses Coriolis flowmeters made from PFA material (page 2, line 2). In fact applicant states that virtually all straight Coriolis flowmeters in the art are made of PFA material. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the flowmeter of Lanham with a PFA material in order to keep with the well established convention within the art.

Regarding claim 16, Lanham discloses a process connection (411) coupled to the base (407, 409) (Figure 4).

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Regarding claim 17, Lanham discloses forming a receiving hole (414) into said base (409) and securing the process connection (411) into said receiving hole (Figure 4).

Regarding claims 18 & 23, Lanham discloses adhering the process connection (904) into the receiving hole in said base (1202) (Figure 12 & page 23, line 10).

Regarding claim 26, Lanham discloses the flow tube (401) and the process connection (411) sealingly engaging one another (Figure 4 & page 18, lines 27).

Claims 7& 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lanham/AAPA, as modified above, and further in view of Drahm et al. (US Patent Application Publication 2001/0035055 A1).

Lanham/AAPA, as modified above, disclose the instant invention except for bending of the flow tube is straightened (or bent) in a fixture while undergoing a heating process.

Drahm discloses bending of the flow tubes (paragraph 0096) in order to form a desired geometry. This bending operation is advantageous in that it increases the flexibility of the manufacturing process by allowing a given flow tube to be bent (or straightened) for use in various Coriolis flowmeter configurations. Furthermore, the examiner takes official notice that the application of heat to the flow tube to facilitate bending is a concept old and well known. Heating (or annealing) of a component that is to be machined provides more desirable material characteristics (for example, it makes metal components more malleable) as well as reducing any residual stresses that may occur to the deformation process.

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Claims 12-15, 19, & 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lanham/AAPA, as modified above, in view of Cage (US Patent No 5753827).

Lanham/AAPA, as modified above, disclose the instant invention except for bonding the driver and pick-off to the flow tube via a cyanoacrylate adhesive.

Cage discloses bonding the magnets of the driver & pick-offs to the flow tube via an adhesive bonding (column 7, lines 35-40). The use of an adhesive to bond the magnets to the flow tube is advantageous in that the adhesive does not jeopardize the integrity of the flow tube as does a welding process (due to the localized heat during the welding/brazing process). Furthermore, the use of cyanoacrylate is considered merely a design choice, since applicant has not disclosed that cyanoacrylate solves any stated problem or is for any particular purpose, and it appears a generic adhesive bonding agent would perform equally as well. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to form a Coriolis flowmeter as disclosed by Lanham while adhesively bonding the magnets of the driver & pick-offs as taught by Cage in order to realize the advantages discussed above.

Claims 27 & 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lanham/AAPA, as modified above.

Lanham/AAPA, as modified above, disclose the instant invention except for the flow tube and process connection being joined via an adhesive or laser welding. It would have been an obvious matter of design choice to join via adhering or laser welding, since applicant has not disclosed that adhering/laser welding solves any stated problem or is for any particular purpose,

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and it appears that the flow tube (401) and process connection (411) of Lanham would perform equally well.

Note, in the event that applicant traverses this argument a U.S.C. 103(a) rejection will be raised in view of Cage (US Patent No 5753827) which discloses the claimed features in column 5, lines 24-26.

Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lanham/AAPA, as modified above, in view of Kane (US Patent No 4856346).

Lanham/AAPA disclose the instant invention except for the use of optical sensors.

Kane discloses utilizing optical sensors/pick-offs (column 4, lines 64+) which require corresponding opaque portions of the flow tube to facilitate the use of said optical sensor/pick-off. The use of optical sensors is widely known, and advantageous in certain applications (depending on composition/density of fluid, flow tube material, etc.). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to form a Coriolis flowmeter as disclosed by Lanham with an optical sensor/pick-off as taught by Kane in order to be employed in a wider range of Coriolis flowmeter applications.

Claims 32, & 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lanham/AAPA in view of Cage.

Lanham discloses the instant invention except for the use of a temperature sensing device.

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Cage discloses using a resistance temperature sensing device (column 7, lines 52-61). A temperature sensing device is beneficial in that it provides additional information about the flow characteristics, such as temperature and density of the fluid. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to form a Coriolis flowmeter as disclosed by Lanham with a temperature measuring device as taught by Cage in order to realize the advantages discussed above.

Allowable Subject Matter

Claims 3-6, 9, 10, 22, 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Response to Arguments

Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

Applicant has put forth the argument that "the manufacturing of Coriolis flow meters having flow tubes and process connections being made entirely of PFA or PTFE material" is novel. However, this limitation is not in the claims. Applicant is not claiming flow tubes and process connections being made entirely of PFA or PTFE material.

Amended claim 1 requires that "at least one process connection formed from PTFE or PFA to form an ultra pure flow path". The use of PFA in forming flow tubes & process connections is a feature that the applicant concedes is known in the prior art (i.e. wherein metal flow tubes are lined with PFA material – see page 2, lines 9-17). The lining of metal flow tubes with PFA material is considered the equivalent of "at least one process connection formed from PFA" as required by amended claim 1.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen J Kenny whose telephone number is 703-306-0359. The examiner can normally be reached on mon - fri 9am - 5pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Greg Vidovich can be reached on 703-308-1513. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1148.

sk SK
9/3/03


GREGORY VIDOVICH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700